

**RESPONSE TO PUBLIC COMMENTS  
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)  
UNDERGROUND INJECTION CONTROL (UIC) PERMITS MI-163-1I-0004,  
MI-163-1I-0005, MI-163-1I-0006, MI-163-1I-0007, MI-163-1I-0008, AND MI-163-3A-0001  
BUCKEYE TERMINALS, LLC  
HOUSTON, TEXAS**

**Introduction**

This response is issued in accordance with Section 124.17(a), (b), and (c) of Title 40 of the Code of Federal Regulations, 40 C.F.R. § 124.17(a), (b), and (c), which requires that at the time any final EPA permit decision is issued, the Agency shall: (1) briefly describe and respond to all significant comments raised during the public comment period; (2) specify which provisions, if any, of the draft decision have been changed and the reasons for the change; (3) include in the administrative record any documents cited in the response to comments; and (4) make the response to comments available to the public.

**Background**

On May 31, 2019, EPA issued draft permits for five Class I non-hazardous waste injection wells and one Class III area permit for solution mining for Buckeye Terminals, LLC, EPA permit #'s MI-163-1I-0004, MI-163-1I-0005, MI-163-1I-0006, MI-163-1I-0007, MI-163-1I-0008, and MI-163-3A-0001. The public comment period ended July 3, 2019. During this comment period, EPA received comments from 12 people.

**General and Out of Scope Comments**

EPA did not hold a public hearing in this matter. Pursuant to 40 C.F.R. §124.12(a)(1), a public hearing must be held when there is a "significant degree" of public interest, i.e. more than just "any public interest." EPA determined that the seven (7) requests for a hearing made during the public comment period did not satisfy the standard. The factors identified in EPA rule preambles and prior EPA Administrator and Board decisions are as follows: the materiality of the issues raised in commenters' requests for a public hearing; the number of hearing requests and comments; the degree of public interest in related State or local proceedings; the amount of media coverage; the significance of the permit action; whether any substitute process was provided; and demographic information. EPA concluded that seven individuals writing on their own behalf requesting a hearing, in a community of 12,500 people and Detroit "downriver" suburban region of 360,000 people, did not constitute "significant public interest", nor did the seven individual commenters raise any material issues substantiating their requests for a hearing.

EPA regulations at 40 C.F.R. Sections 144 and 146 state the requirements and standards that a permit applicant must meet to have an Underground Injection Control (UIC) permit application approved. These regulations define the general scope of EPA's authority and review process, which include standards for geologic siting, well engineering, operation and monitoring, and plugging and abandonment of deep injection wells.

EPA received general comments and three comments directed at matters outside the scope of the UIC Program's purview. EPA acknowledges the submittal of these comments and clarifies that because it raises matters that are not addressed by the UIC regulations and are outside the scope of the UIC permit process, EPA does not respond to them specifically in this document. These out-of-scope comments are listed below without response.

*It is lunacy to store and use fossil fuels during a time concerned with climate change.*

*Converting 1.8 million gallons a day of freshwater to saltwater and injecting it deep in the earth is a waste of clean drinking water. This freshwater should be used for affordable drinking water for citizens. This is criminal.*

*There is no shortage of salt. Look in Pennsylvania for salt.*

## **Significant Comments**

### **Comment #1**

The risk of hydrofracking the watershed in Wayne County outweighs the economic benefits.

#### **Response to Comment #1:**

The maximum injection pressure regulated by these permits is set so that the injection pressure will not fracture the injection zone rock. In other words, these are not hydrofracking wells. Furthermore, these permits restrict the type of fluid injected into the Class I wells to wastewater consisting of brine associated with the solution mining of salt caverns utilized to store liquified petroleum gas and excess brines created through normal cavern operation. The Class III permit restricts injection to fresh water for the purpose of solution mining.

### **Comment #2**

Injection of out of state fracking waste will contaminate Wayne County's water.

#### **Response to Comment #2:**

Buckeye Terminals LLC permits restrict fluid injection into the Class I wells to wastewater consisting of brine associated with the solution mining of salt caverns utilized to store liquified petroleum gas and excess brines created through normal cavern operation. The Class III permit restricts injection to fresh water for the purpose of solution mining. Injection of any fluids not authorized by the permit would be a violation of the permit subject to enforcement.

The purpose of the UIC program is to protect Underground Sources of Drinking Water (USDWs) from endangerment by underground injection practices. The UIC regulations are designed to protect USDWs from contamination by: (1) identifying drinking water sources for protection; (2)

making sure the geological siting is suitable for injection; and (3) applying standards for well construction, operation, and reporting.

The UIC program protects current and future sources of drinking water by defining a USDW broadly. USDWs, by definition, include fresh water aquifers in current use as well as those that meet certain criteria indicating they could be used as drinking water, even if they are not currently used. USDWs are defined based on quantity, current usage, and the concentration of dissolved solids in the aquifer. The concentration of dissolved solids is an indicator as to whether an aquifer has the potential to be potable, even if it is not currently used for drinking water.

Specifically, UIC regulations (40 C.F.R. §§ 144.3 and 146.3) define a USDW as any aquifer which is currently being used as a drinking water source or which is of sufficient volume and adequate quality to be a source for a public water system. An aquifer or portion of an aquifer which contains less than 10,000 milligrams per liter (mg/L) of total dissolved solids is considered a potential drinking water source and is therefore protected even if it is not being used. Potable water generally contains less than 500 mg/L of total dissolved solids. By protecting water supplies that have more dissolved solids than normal drinking water, the UIC program also protects USDWs that could potentially be treated for use in the future. Based on the *Michigan Hydrogeologic Atlas* and wells in the vicinity, the lowermost USDW has been identified as the Sylvania Sandstone. The base of the Sylvania Sandstone is located approximately 350 feet below ground surface at this location.

The geologic siting of the injection wells is suitable for underground injection. Nearby well records and regional geology publications show that the proposed injection zone for the Class I wells is the Eau Claire Formation and Mount Simon Sandstone from 3470 feet to 3730 feet below the surface; the proposed injection zone is the Salina B Salt Formation from 1070 to 1150 feet below the surface for the four Class III cavern wells. The Michigan Hydrogeologic Atlas indicates that the Eau Claire Formation and the Mount Simon Sandstone are porous zones that are used for injection. The solution mining injection zone for the Class III cavern wells is within the Salina B Salt Formation; after solution mining ceases, the brine produced by injection of fresh water will be pumped out of the caverns for disposal into any of the five Class I injection wells. The empty caverns are intended for the future storage of Liquefied Petroleum Gas (LPG).

For the Class I wells, the top of the injection zone is separated from the bottom of the USDW by approximately 3,120 feet of rock formation layers. Above the Eau Claire Formation is a confining zone which caps the top of the injection zone formation and prevents the upward movement of fluids from below. This confining zone is the Utica Shale. Nearby well records and regional geology publications show that the confining zone is present between 2,060 and 2,380 feet below ground surface. According to the Michigan Hydrogeologic Atlas, the Utica Shale is an excellent confining layer, having very low permeability and very low effective porosity.

For the Class III wells, the injection zone (1070 feet depth) is overlain by about 550 feet of impermeable rock formations (the Salina C, D, E, F, and G Salt Formations). According to the Michigan Hydrogeologic Atlas, the Salina Salt Formations are excellent confining layers, having very low permeability and very low effective porosity.

In addition to the injection wells being sited in an area in which the geological formations are appropriate for injection, the Permittee must construct and operate the injection wells to prevent the injection fluid from contaminating a USDW. The injection wells will be constructed with three casing strings (steel pipes). The three casing strings will be cemented in place from the base to the surface. These layers of steel casing and cement will protect the USDW and prevent the movement of fluids out of the injection zone.

The proposed injection will take place through tubing which is set within the innermost casing. In each well, only fluid approved for injection will be permitted to flow through the inside of this tubing. A device called a packer will be set at the bottom of the tubing to seal off the space between the casing and tubing. This space, called the annulus, will be filled with liquid containing a corrosion inhibitor, and the pressure of the annulus liquid in this space will be monitored to detect any changes in pressure which could indicate a leak in either the tubing, packer, or casing. The Permittee will test this annulus space between the tubing and casing under high pressure initially after the wells are constructed to ensure that all wells have mechanical integrity and then monitor it continuously thereafter to ensure that the wells maintains mechanical integrity. The Permittee will not be allowed to inject fluids through this monitored annulus space. Because the Permittee will only inject fluids through the tubing, the fluids will not be in contact with the well casing above the packer.

For all wells, the Permittee will continuously monitor injection pressures, annulus pressures, and the differential between the two. If monitoring indicates a leak or if the well should fail a mechanical integrity demonstration, then the permit requires the Permittee to shut down the well and submit a report to EPA. The Permittee must report to EPA any repairs or corrective actions taken to bring the well back into compliance with the permit and any work performed on the well that requires the moving and/or removal of the tubing or packer and the Permittee must follow such work by a mechanical integrity test before EPA will give authorization to resume injection. Under permit conditions, the injection pressure will be limited to ensure the safe operation of the well and the Permittee must submit monthly reports to EPA for review.

Following review of the permit application, EPA has determined that the well injection will not impact drinking water supplies. The geologic siting, engineering and construction, and operating and monitoring standards applied to the injection well are sufficient to protect the USDW.

Since UIC permit requirements are intended to protect USDWs, they will also help protect the surface waters that may be connected to USDWs. While area surface water features may have a hydrologic connection with shallow groundwater, they are not deeper than the base of the lowermost USDW. Therefore, by protecting the USDWs, the surface and surface waters are inherently protected.

**Comment #3**

The injected hazardous waste will migrate to the aquifer.

**Response to Comment #3:**

The fluid which the Permittee plans to inject into the Class I and Class III wells is not identified as hazardous under Federal regulations at 40 CFR Part 261. Response to Comment # 1 identifies the type of waste which the Permittee will be permitted to inject into the wells.

Response to Comment #2 addresses the concern of injected waste migrating to the aquifer.

**Comment #4**

Injection of salt water laced with chemicals will have disastrous effects on human health and the environment. Concerned about the health consequences of the injection operation. The risks of the proposed activity will do more harm to the environment than good.

**Response to Comment #4:**

See Response to Comment #2

**Comment #5**

The confining layer will not contain the injected fluids.

**Response to Comment #5**

See Response to Comment #2 regarding the confining layers for the Class I and Class III wells.

**Comment #6**

Concerns about the dangers of an out of state company storing fossil fuels or waste products that can affect human health and drinking water.

**Response to Comment #6**

The response to concerns regarding human health and drinking water are identified in Response to Comment #2.

UIC regulations require the permittee, regardless of where the company is located, to provide financial assurance for properly plugging all wells. Buckeye Terminals, L.L.C. has provided the financial resources required by Federal Regulations to properly plug and abandon these wells. Plugging costs for both the Class I and Class III wells are covered by Buckeye Partners, LP financial statement demonstration. This demonstration consists of certification by Buckeye's Chief Financial Officer that the company meets EPA's financial requirements for financial

demonstration. The demonstration includes using the audited information from Buckeye's income statement and balance sheet to calculate the ratios required for EPA's financial test.

In addition to the financial assurance to plug the injection wells, the SDWA Section 1431, 42 U.S.C. §300i, allows EPA to require owners to clean up any contamination of a USDW due to injection and/or supply alternative water to affected parties. An operator is required to do what any reasonable person would do to prevent or correct environmental damage. A reasonable action might be to prevent and contain any surface spills, remediate groundwater contamination, and replace any degraded component of the well.

The Michigan Department of Environment, Great Lakes and Energy, under Act 307, can also require owners to clean up any contamination due to injection, and/or supply alternative water to affected parties. In addition, EPA has other programs that could utilize regulatory tools (e.g., the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or "CERCLA", and the Resource Conservation and Recovery Act, or "RCRA") to clean up sites and to compel responsible parties to perform cleanups or reimburse the government for EPA-led cleanups.

#### **Comment #7**

21% of the worlds fresh water resides in Michigan. There is no assurance that Buckeye Terminals will not contaminate these waters.

#### **Response to Comment #7**

See Response to Comment #2 and Comment #6.

#### **Comment #8**

Marathon Pipe Line LLC (MPL) operates a liquid petroleum gas (LPG) underground storage facility in close proximity to the proposed caverns and wells. MPL's existing LPG storage caverns are located in the same Salina B salt formation as the proposed LPG storage caverns. It is imperative that care be taken in the design, construction, and operation of new LPG storage caverns that are in close proximity to, and in the same salt formation as, existing caverns to ensure the long-term integrity of the storage caverns at both facilities and to maintain public safety. American Petroleum Institute Recommended Practice 1115, "Design and Operation of Solution-mined Salt Caverns Used for Liquid Hydrocarbon Storage," 2nd Edition, contains several recommended practices related to the development of a new underground LPG storage cavern facility (including the wells) in close proximity to existing underground storage caverns. These practices should be followed to prevent adversely affecting the long-term integrity of MPL's existing LPG storage caverns and to maintain public safety.

**Response to Comment #8:** EPA technical review of the Buckeye Terminals Class III permit application has confirmed, using latitude-longitude coordinates provided by Buckeye and

Marathon, that the locations and planned size (design diameter of 250 feet) of the solution mined caverns will be small enough to be contained within Buckeye's property boundary.

The final Class III permit includes the terms and conditions necessary to protect the USDW. Two such conditions appear in Part III(A) of the permit. The first provides that Buckeye shall maintain a salt cavern roof thickness of a minimum of 30 feet between the overlying Salina Group and the cavern ceiling. The second requires an initial measurement of roof thickness with repeat measurements every three years thereafter. EPA has provided Buckeye with a copy of Marathon's comment letter to EPA, and has encouraged Buckeye to coordinate with Marathon on actions, beyond those required by the permit, to assure that the design, construction, and operation of the of the proposed Buckeye cavern wells do not compromise the long-term integrity of the existing Marathon cavern wells, nor pose a public safety concern.

### **Determination**

After consideration of all public comments, EPA has determined that none of the comments submitted have raised issues which would alter EPA's basis for determining that it is appropriate to issue Buckeye Terminals, LLC, the five Class I non-hazardous injection permits and one Class III area permit for solution mining. There are no changes in the final permits from the draft permits.

### **Appeal**

In accordance with 40 C.F.R. § 124.19(a), any person who filed comments on the draft permits may petition the Environmental Appeals Board (EAB) to review any condition of the final permit decisions. Additionally, any person who failed to file comments on the draft permits may petition the EAB for administrative review of any permit conditions set forth in the final permit decisions, but only to the extent that those final permit conditions reflect changes from the proposed draft permits. Any petition shall identify the contested permit condition or other specific challenge to the permit decision and clearly set forth, with legal and factual support, petitioner's contentions for why the permit decision should be reviewed, as well as a demonstration that any issue raised in the petition was raised previously during the public comment period, to the extent required by these regulations. The petition should also state whether the permit issuer has already responded to the issue raised (including in this response to comments) and provide an explanation of why the permit issuer's response to comments was inadequate, as required by 40 C.F.R. § 124.19(a)(4).

If you wish to request an administrative review, documents in EAB proceedings may be filed by mail (either through the U.S. Postal Service ("USPS") or a non-USPS carrier), hand-delivery, or electronically. The EAB does not accept notices of appeal, petitions for review, or briefs submitted by facsimile.

All submissions in proceedings before the EAB may be filed electronically, subject to any appropriate conditions and limitations imposed by the EAB. To view the Board's Standing Orders concerning electronic filing, click on the "Standing Orders" link on the Board's website at [www.epa.gov/eab](http://www.epa.gov/eab).

All documents that are sent through the USPS, except by USPS Express Mail, must be addressed to the EAB's mailing address, which is: Clerk of the Board, U.S. Environmental Protection Agency, Environmental Appeals Board, 1200 Pennsylvania Avenue, NW, Mail Code 1103M, Washington, D.C. 20460-0001.

Documents that are hand-carried in person, delivered via courier, mailed by Express Mail, or delivered by a non-U.S. Postal Service carrier (e.g., Federal Express or UPS) must be delivered to: Clerk of the Board, U.S. Environmental Protection Agency, Environmental Appeals Board, 1201 Constitution Avenue, NW, WJC East Building, Room 3334, Washington, D.C. 20004.

A petition for review of any condition of a UIC permit decision must be filed with the EAB within 30 days after EPA serves notice of the issuance of the final permit decision.

40 C.F.R. § 124.19(a)(3). When EPA serves the notice by mail, service is deemed to be completed when the notice is placed in the mail, not when it is received. However, to compensate for the delay caused by mailing, the 30-day deadline for filing a petition is extended by three days if the final permit decision being appealed was served on the petitioner by mail.

40 C.F.R. § 124.20(d). Petitions are deemed filed when they are received by the Clerk of the Board at the address specified for the appropriate method of delivery. 40 C.F.R. § 124.19(a)(3) and 40 C.F.R. § 124.19(i). The request will be timely if received within the time period described above.

For this request to be valid, it must conform to the requirements of 40 C.F.R. § 124.19 available electronically at <http://www.gpo.gov/fdsys/pkg/CFR-2013-title40-vol23/pdf/CFR-2013-title40-vol23-sec124-19.pdf>. This request for review must be made prior to seeking judicial review of any permit decision. Additional information regarding petitions for review may be found in the *Environmental Appeals Board Practice Manual* (August 2013) and *A Citizen's Guide to EPA's Environmental Appeals Board* (January 2013), both of which are available at [http://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/General+Information/Environmental+Appeals+Board+Guidance+Documents?OpenDocument](http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/General+Information/Environmental+Appeals+Board+Guidance+Documents?OpenDocument).

The EAB may also decide on its own initiative to review any condition of any UIC permit. The EAB must act within 30 days of the service date of notice of the Regional Administrator's action. Within a reasonable time following the filing of the petition for review, the EAB shall issue an order either granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action when a final permit decision is issued by the EPA pursuant to 40 C.F.R. § 124.19(l).



Joan M. Tanaka  
Acting Director, Water Division  
U.S. Environmental Protection Agency  
Region 5

Date 09/27/19